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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,615	04/16/2004	Larry S. Eoff	2003-IP-010033U1	1319

7590 01/12/2006
Robert A. Kent
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EXAMINER

SUCHFIELD, GEORGE A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,615

Applicant(s)

EOFF ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 24-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-22 is/are rejected.
- 7) ☒ Claim(s) 7-10 and 23 is/are objected to.
- 8) ☒ Claim(s) 1-42 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/17/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-23 and 42, drawn to a method of plugging a subterranean formation penetrated by a wellbore, classified in class 166, subclass 250.14.
 - II. Claims 24-41, drawn to a composition, classified in class 507, subclass 226.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product or composition could be used for plugging other permeable media, such as in soil treatment or consolidation in conjunction with building or highway construction. Also, the it appears the composition could be useful in sewer repair operations.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Robert A. Kent on December 14, 2005 a provisional election was made without traverse to prosecute the invention of Group I; claims 1-23 and 42. Affirmation of this election must be made by applicant in replying to this Office

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action. Claims 24-41 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-5, 11-22 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reddy et al (6,176,315).

Reddy et al discloses a process of blocking or reducing the permeability of an elevated-temperature zone by injection of a polymer-gel sealing composition comprised of water, an

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acrylate or acrylamide-based water-soluble polymer, and a water-soluble polyvinylamine polymer comprised of vinyl amine monomers or units, such as polyethyleneimine. Reddy et al further discloses the selection of an elevated temperature zone having a temperature in excess of 70oF or 150oF for treatment, and further formulates the polymer sealing composition by selecting or tailoring the components of the polymer gel-forming composition to provide a pumping time of equal to or greater than 2 hours.

While Reddy et al does not specifically recite the selection of a high-temperature formation having a temperature of 190oF (88oC), to select a formation having such specific temperature and/or temperature range, as recited in independent claim 1, would have been an obvious matter of choice or design to one of ordinary skill in the art based on, e.g., the characteristics and properties of the particular subterranean formation(s) or well bore environment actually encountered in the field and/or the specific type and duration of any thermal enhanced oil recovery operation, such as in situ combustion or steam stimulation, previously carried out resulting in such elevated temperature.

Further with respect to claim 1, as well as claim 11, it is deemed that the acrylamide and/or acrylate-based polymer component utilized in the polymer gel-forming composition can be construed as the “organic compound capable of crosslinking” the polyvinylamine or polyethyleneimine component, since such components inter-react in a crosslinking manner or mechanism.

As per claims 2-5, 20, 21 and 42, the temperature ranges recited, as well as the necessary gelation or pumping time of the polymer gelation composition are similarly deemed an obvious matter of choice or design in carrying out the method of Reddy et al based on, e.g., the particular

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formation encountered and/or type or duration of any thermal EOR technique previously carried out, resulting in “a subterranean zone having a high temperature” (note col. 1, lines 55-57).

As per claim 12, the precise ratio of polyethyleneimine and acrylamide and/or acrylate-based polymer components recited would have been an obvious matter of choice or design, e.g., in tailoring the polymer gel-forming composition to set within the prescribed 2 hours or more setting or gelation time.

As per claims 13-19, it appears that one or more of the acrylamide and/or acrylate-based polymer species and/or monomer(s) comprising such acrylamide/acrylate polymer, such as the “AMPS” monomer, are set forth or encompassed by Reddy et al.

As per claim 22, it is deemed that the overall step(s) in Reddy et al wherein “the composition is allowed to form a cross-linked gel in the zone” (col. 2, lines 2-5) necessarily, i.e., inherently, encompasses a step of preventing flowback from the formation, in order to “allow” the gelation and plugging to occur.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

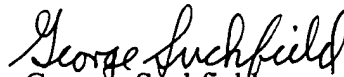
Dalrymple et al (2005/0000694) discloses the plugging and treatment of a subterranean formation comprising the use of a polyvinylamine polymer/copolymer as a relative permeability modifier. Other references disclose processes and exemplary treatment fluids for plugging or permeability modification of elevated-temperature formations

11. Claims 7-10 and 23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


George Suchfield
Primary Examiner
Art Unit 3676

Gs
January 7, 2006